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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,534	04/20/2005	Koji Sasaya	AK-476XX	2313
207 7590 05/08/2007 WEINGARTEN, SCHURGIN, GAGNEBIN & LEOVICI LLP TEN POST OFFICE SQUARE BOSTON, MA 02109			EXAMINER KARLS, SHAY LYNN	
			ART UNIT 1744	PAPER NUMBER
			MAIL DATE 05/08/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/510,534	<b>Applicant(s)</b> SASAYA, KOJI	
	<b>Examiner</b> Shay L. Karls	<b>Art Unit</b> 1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwai et al. (USPN 5633083) in view of Ishijima (USPN 5409714).**

Iwai teaches a toothbrush with antimicrobial agents coated on the bristle filaments of a toothbrush (col. 2, lines 48-51 and col. 3, lines 25-45). The bristles are formed by applying the antimicrobial agent to the filament and then allowing the agent to set, thus obtaining coated treated filaments. Since the filaments are coated it is clear that the agent is more densely distributed on an outside surface of the bristle than on an inside portion of the bristle. Iwai teaches all the essential elements of the claimed invention however fails to teach that the antimicrobial product is formed by mixing pulverized shells forming calcium carbonate (claim 1 and 3) and calcined shells forming calcium oxide (claim 3). Ishijima teaches an antimicrobial

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product that formed by mixing pulverized shells forming calcium carbonate (col. 3, lines 36-38) and calcined shells forming calcium oxide (col. 1, lines 52-57). The calcium carbonate comprises porous granules forming a shell powder (col. 3, lines 36-38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the antimicrobial agent used in Iwai for the antimicrobial product used by Ishijima since both antimicrobial agents perform the same function of preventing fungus and bacterial from growing equally well. They are equivalent structures known the art and can be used interchangeably for the intended use as a matter of obvious engineering choice. Therefore, because these two antimicrobial agents were art-recognized equivalents at the time the invention was made, one of skill in the art would have found it obvious to substitute the antimicrobial agent of Ishijima for the antimicrobial agent of Iwai.

**Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwai et al. (USPN 5633083) in view of Ishijima (USPN 5409714) and further in view of Itou (JP 2001-199823).**

Iwai and Ishijima teach all the essential elements of the claimed invention however fail to teach that the shells used are scallop shells. Ishijima instead teaches using oyster shells. Itou teaches forming an antibacterial agent from the shell of a scallop (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the oyster shell of Ishijima with a scallop shell as taught by Itou since scallop shells maintain a higher level of antibacterial action for a longer period of time than oyster shells.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**Claims 1-6 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 7, 9-12 of copending Application No. 10/450286 in view of Iwai (USPN 5633083).**

Regarding claim 1, ‘286 teaches an antimicrobial product obtained by pulverized scallop shells having a crystalline calcite structure of calcium carbonate (claim 7, 11). Regarding claim 3, the antimicrobial product is a mixture of calcium carbonate powder having porous granules and a calcium oxide prepared by calcining the calcium carbonate powder (claim 9). The product can be an aqueous solution of the mixture (claim 10, 12).

Iwai teaches a toothbrush with antimicrobial agents coated on the bristle filaments of a toothbrush (col. 2, lines 48-51 and col. 3, lines 25-45). The bristles are formed by applying the antimicrobial agent to the filament and then allowing the agent to set, thus obtaining coated

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treated filaments. Since the filaments are coated it is clear that the agent is more densely distributed on an outside surface of the bristle than on an inside portion of the bristle. Iwai teaches all the essential elements of the claimed invention however fails to teach that the antimicrobial product is formed by mixing pulverized shells forming calcium carbonate (claim 1 and 3) and calcined shells forming calcium oxide (claim 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the antimicrobial product used in Iwai for the calcium carbonate antimicrobial product used in '286 since both products perform the same function of preventing fungus and bacterial from growing equally well. They are equivalent structures known the art and can be used interchangeably for the intended use as a matter of obvious engineering choice. Therefore, because these two antimicrobial products were art-recognized equivalents at the time the invention was made, one of skill in the art would have found it obvious to substitute the antimicrobial product of '286 for the antimicrobial agent of Iwai.

This is a provisional obviousness-type double patenting rejection.

### ***Response to Arguments***

Applicant's arguments, filed 2/13/07, with respect to the rejection(s) of claim(s) 1-4 under Cueman and Sawan have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Iwai et al. Applicant amended the claims so that the antimicrobial agent is more densely distributed on an outside surface of each filament than on an inside portion. Iwai teaches a toothbrush with antimicrobial agents coated on the outer surface of the

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filaments. This coating will lead to a more dense concentration of antimicrobial agent on the outer surface of the bristles.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shay L. Karls whose telephone number is 571-272-1268. The examiner can normally be reached on 7:00-4:30 M-Th, alternating F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on 571-272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Shay L. Karls  
Patent Examiner  
Art Unit 1744



GLADYS J. CORCORAN  
SUPERVISORY PATENT EXAMINER